UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 10/780,002 | 02/17/2004 | Daniel F. Klessig | 3670-P02652US01 | 9555 |

110 7590 07/28/2005

DANN, DORFMAN, HERRELL & SKILLMAN
1601 MARKET STREET
SUITE 2400
PHILADELPHIA, PA 19103-2307

| EXAMINER | |
|---|---|
| IBRAHIM, MEDINA AHMED | |
| **ART UNIT** | **PAPER NUMBER** |
| 1638 | |

DATE MAILED: 07/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/780,002 | KLESSIG ET AL. | |
| | Examiner | Art Unit | |
| | Medina A. Ibrahim | 1638 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *13 October 2004*.

2a)☐ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-43* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) _____ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☒ Claim(s) *1-43* are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

## DETAILED ACTION

### *Election/Restrictions*

Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claims 1-9, 24-32, drawn to an isolated nucleic acid encoding a polypeptide, a vector, host cell comprising said nucleic acid, classified in class 800, subclass 278, for example.

II. Claims 10-11, drawn to an isolated polypeptide, classified in class 530, subclass 350, for example.

III. Claims 12, drawn to an antibody, classified in class 530, subclass 387.1, for example.

IV. Claims 13-23 and 41-43, drawn to a method for identifying an agent or a homolog, classified in class 435, subclass 6, for example.

V. Claims 33-40, drawn to a method for inhibiting function of a nucleic acid and transgenic plant with knockout gene expression, classified in class 800, subclass 286, for example.

For each of the inventions IV and V above, restriction is also required to one of the sequences of 31-49.

Nucleic acid sequences of SEQ ID NO: 31-49 are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions comprise

structurally different nucleic acids. Also, the different sequences have different level of effects. In addition, since each nucleic acid is disclosed in specific SEQ ID NO: the structural difference between the nucleic acid sequences would not have obvious over each other.

The inventions I-V are distinct, each from the other because of the following reasons:

Inventions I and II are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions are directed to a divergent product having different structure and function.

The polypeptide of group II and nucleic acid of group I are patentably distinct inventions for the following reasons. Polypeptides, which are composed of amino acids, and nucleic acids, which are composed of purine and pyrimidine units, are structurally distinct molecules; any relationship between a nucleic acid and polypeptide is dependent upon the information provided by the nucleic acid sequence open reading frame as it corresponds to the primary amino acid sequence of the encoded polypeptide. In the present claims, a nucleic acid of group I does not necessarily encode a polypeptide of group II. For example, the nucleic acid of claim 1( c) is a complementary to the coding sequence, and therefore would not encode the polypeptide of group II. Furthermore, while a polypeptide of group II can made by methods using some, but not all, of the nucleic acids that fall within the scope of group I,

it can also be recovered from a natural source using by biochemical means. For instance, the polypeptide can be isolated using affinity chromatography. For all these reasons, the inventions of groups I and II are patentably distinct.

Furthermore, searching the inventions of groups I and II together would impose a serious search burden. In the instant case, the search of the polypeptides and the nucleic acids are not coextensive. The inventions of Groups I and II have a separate status in the art as shown by their different classifications. In cases such as this one where descriptive sequence information is provided, the sequences are searched in appropriate databases. There is search burden also in the non-patent literature. Prior to the concomitant isolation and expression of the sequence of interest there may be journal articles devoted solely to polypeptides which would not have described the nucleic acid. Similarly, there may have been "classical" genetics papers which had no knowledge of the polypeptide but spoke to the gene. Searching, therefore is not coextensive. As such, it would be burdensome to search the inventions of groups I and II together.

Inventions I and III are unrelated because they are directed to structurally and functionally distinct products. The nucleic acid of Group I will not encode the antibody of Group III. The instant specification does not disclose that the antibody of Group III can be used in the plant transformation method of Group I. Inventions I and III have separate status in the art as shown by their different classifications. Searching these inventions together would impose serious search burden.

The invention of Group I and IV (or V) are unrelated because the plant transformation method of Group I, the method for identifying an agent of Group IV, and the method of inhibiting gene expression of Group V , each are unrelated as they comprise distinct steps and utilize different products which demonstrate that each method has a different mode of operation. Each invention performs this function using structurally and functionally divergent material, and therefore the inventions I and V are patentably distinct. The method of Group I uses DNA and promoter, while the method of Group IV uses a salicylic acid analogue. The method of Group V uses mutated nucleic acids including an antisense sequence which are not required by any of the other methods. The transgenic plant of group I comprises overexpressed SAPB2 nucleic acid, while the transgenic of Group IV comprises mutated/inhibited SAPB2 nucleic acids. The instant specification does not disclose that the method of Group V can be used with the method of Group I or IV. Furthermore, the distinct steps and products require separate and distinct searches. The inventions of Groups I, IV and V have a separate status in the art as shown by their different classifications. As such, it would be burdensome to search the inventions of Groups 1 and IV or V together.

The polypeptide of Group II and the antibody of Group III are patentably distinct because they differ in structure, function and effects. While the inventions of both Group II and III are both polypeptides, in this instant the polypeptide of Group II is a single chain molecule that functions as an enzyme, whereas the polypeptide of Group III encompasses antibodies including IgG which comprises 2 heavy and 2 light chains containing constant and variable regions, and including framework regions which act as

a scaffold for the 6 complementarity determining regions (CDRs) that function to bind an epitope. Thus, the polypeptide of Group II and the antibody of Group III are structurally and functionally distinct molecules. Furthermore, searching the inventions of Group II and III would impose a serious search burden. The inventions have a separate status in the art as shown by their different classifications. A polypeptide and an antibody which binds to the polypeptide require different searches. An amino acid sequence search of the full-length protein is necessary for a determination of novelty and unobviousness of the polypeptide. However, such a search is not required to identify the antibodies of Group IV. Furthermore, antibodies, which bind to an epitope of a polypeptide of Group II, may be known even if a polypeptide of Group II is novel. In addition, the technical literature search for the polypeptide of Group II and the antibody of Group III are not coextensive, e.g., antibodies may be characterized in the technical literature prior to discovery of or sequence of their binding target. Therefore, inventions of Groups II and III are patentably distinct.

The Inventions II and IV (or V) are unrelated because the instant specification does not disclose that the isolated polypeptide of Group II can be used in the method of Group IV or the method of Group V. Searching the inventions II and VI (or V) together would impose serious search burden. The two inventions have a separate status in the art as shown by their different classifications.

The Inventions III and IV (or V) are unrelated because the instant specification does not disclose that the antibody of Group III can be used in the method of Group IV or the method of Group V. Searching the inventions III and VI (or V) together would

impose serious search burden. The two inventions have a separate status in the art as shown by their different classifications.

Because these inventions are distinct for the reasons set forth above and have acquired a separate status in the art as shown by their different classifications and their recognized divergent subject matter and because the literature search required for the groups is not coextensive, restriction for examination purposes as indicated is proper.

Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

**Contact Information**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Medina A. Ibrahim whose telephone number is (571) 272-0797. The Examiner can normally be reached Monday -Thursday from 8:00AM to 5:30PM and every other Friday from 9:00AM to 5:00 PM. Before and after final responses should be directed to fax nos. (703) 872-9306 and (703) 872-9307, respectively.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Dr. Amy Nelson, can be reached at (571) 272-0804.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status

information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

7/22/05

Mai

Medina A. Ibrahim

MEDINA A. IBRAHIM
PATENT EXAMINER